

Appl. No. 10/052,966  
Atty. Docket No. G-271ML (CP-1230)  
Amdt. dated April 25, 2008  
Reply to Office Action of November 26, 2007  
Customer No. 27752

### REMARKS

#### Amendments to the Claims

Claims 1-3, 25, and 26 are pending in the present application. Claims 4-6 and 10-24 were previously canceled. New claim 26 has been added. Support for new claim 26 can be found in claim 1 and in the specification, at page 12. No additional claims fee is believed to be due.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

#### Rejection Under 35 USC §103(a) Over German Application No. 4429344 to Rose et al.

Claims 1 and 25 have been rejected under 35 U.S.C. §103(a) as being unpatentable over German Application No. 4429344 to Rose et al. ("Rose"). The Office asserts that Rose teaches aminomethylated dihydroxybenzene compounds and their use in oxidative hair dyeing. The Office asserts that Rose teaches the compound 4-[[bis(2-hydroxyethyl)aminomethyl]-1,3-benzenediol. The Office acknowledges that the claimed compound requires an aminomethyl substitution at the 2-position, while the compound of Rose requires an aminomethyl substitution at the 4-position. The Office asserts that the claimed compound is obvious over the compound of Rose, because the two compounds are structurally similar and hence expected to possess similar properties. Applicants respectfully traverse the rejection.

The compounds of claims 1 and 25 are aminomethylated dihydroxybenzene compounds, specifically 1,3-benzenediol compounds having an aminomethyl substitution at the 2-position. These aminomethylated dihydroxybenzene compounds are dye couplers. Dye compounds are generally grouped into two categories, primary intermediate dye precursors and dye couplers. In a hair-coloring reaction, a primary intermediate dye precursor, such as p-phenylenediamine (or its derivatives), is oxidized in the hair shaft by an oxidizing agent (i.e., hydrogen peroxide) to form a reactive electrophilic species. The oxidized primary intermediate then reacts with a coupler compound, such as a 2-aminomethyl-1,3-benzenediol. The product of the coupling reaction, a dimer, is oxidized to the final colored dye molecule. Such dimers can go on to form trimers, tetramers, and so forth. The color imparted to hair depends on the ratio of the various primary

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intermediate dye precursors and couplers and on the total concentration of each dye. Shade formulation is very complicated, especially in shades containing multiple primary intermediate dyes and/or multiple couplers, as such shades involve many reactions.

Importantly, the coupler compounds of the present invention, in contrast to the compounds of Rose, are substituted with an aminomethyl group at the 2-position. This substitution at the 2-position renders the 4-position and the 6-position available for coupling. As acknowledged by the Office (Office Action, page 3), the compounds disclosed in Rose require an aminomethyl substitution at the 4-position. The compounds of Rose can therefore undergo coupling only at the 6-position (the unsubstituted 2-position is too sterically hindered by hydroxyl groups to undergo coupling). The two compounds would not be expected to possess similar properties, contrary to the assertions of the Office. Consequently, a hair colorant composition containing the Rose compound would yield a different color in hair than a composition containing the applicant's compound.

Accordingly, the Rose reference fails to establish a *prima facie* case of obviousness with respect to applicant's claim 1 and claim 25, which recites various 2-aminomethyl-1,3-benzenediol compounds. The applicant respectfully submits that these rejections are in error and should be withdrawn.

Rejection Under 35 USC §103(a) Over German Application No. 4200534 to Konrad et al.

Claims 1-3 and 25 have been rejected under 35 U.S.C. §103(a) as being unpatentable over German Application No. 4200534 to Konrad et al. ("Konrad"). The Office asserts that Konrad teaches the compound 4-[(4-hydroxyphenyl) amino] methyl]-1, 3-benzenediol. The Office acknowledges that the claimed compound requires an aminomethyl substitution at the 2-position, while the compound of Konrad requires an aminomethyl substitution at the 4-position. The Office asserts that the claimed compound is obvious over the compound of Konrad, because the two compounds are structurally similar and hence expected to possess similar properties. Applicant respectfully traverses the rejection.

For the reasons discussed above in regard to the Rose reference, the compounds of the instant invention and the compounds of Konrad would not be expected to possess similar properties. As such, the claimed compound is not obvious over the compound of

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Konrad. Accordingly, the Konrad reference fails to establish a *prima facie* case of obviousness with respect to applicant's claim 1 and claim 25, which recites various 2-aminomethyl-1,3-benzenediol compounds. Claims 2 and 3 depend from claim 1 and are therefore patentable for the same reasons as claim 1. The applicant respectfully submits that these rejections are in error and should be withdrawn.

Rejection Under 35 USC 103(a) Over German Application No. 4200534 to Konrad et al. or German Application No. 4429344 to Rose et al. in view of US Patent No. 3951970 to Razdan et al.

Claim 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Application No. 4200534 to Konrad et al. ("Konrad") or German Application No. 4429344 to Rose et al. ("Rose") in view of US Patent No. 3951970 to Razdan et al. ("Razdan"). The Office acknowledges that both Rose and Konrad fail to teach the claimed process of preparing the compound of claim 1 and instead teach processes such as catalytic hydrogenation (Konrad) or the reaction of 2-methylresorcinol with 3-hydroxyethyl resorcinol (Rose). The Office states that Razdan teaches resorcinol amine derivatives of formula 1 (col. 1, lines 9-21). According to the office, Razdan teaches that the compounds of formula 1 are prepared by reacting a compound of formula 2 (methoxybenzene) with formaldehyde and a secondary amine, in accordance with a Mannich reaction (col. 2, lines 28-67). The Office acknowledges that the compounds prepared by Razdan do not read on the claimed benzenediol compounds and that the process of Razdan does not read on the claimed process. The Office asserts, however, that it would have been obvious for one of ordinary skill in the art to employ the reactants of Razdan to prepare the resorcinol derivatives of Rose or Konrad. Applicants respectfully traverse the present rejection based on the following comments.

For the reasons discussed above in regard to the Rose and Konrad references, the compounds of the instant invention and the compounds of Rose and Konrad would not be expected to possess similar properties. Thus, even assuming *arguendo* that the process of Razdan could be used to prepare the compounds of Rose and Konrad, such products of the Razdan process would not be expected to possess properties similar to the properties of the claimed compounds. Moreover, the Mannich reaction described in Razdan would not ensure proper substitution of the aminomethyl group at the 2-position of the claimed

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compound. As the Office notes (Office Action, page 5), the Razdan compound has an alkyl group at the 5-position; this alkyl group sterically hinders the 4-position and the 6-position of the compound, thereby ensuring that the amine group is substituted at the 2-position (in a Mannich reaction). In contrast, in the claimed process, the reactant, 2,6-dimethoxy-benzaldehyde, has no substituent at the 5-position, thereby leaving both the 4-position and the 6-position open for substitution by the aminomethyl substituent (in a Mannich reaction). Thus, the Mannich reaction described in Razdan would not ensure proper substitution of the aminomethyl group at the 2-position of the claimed compound.

Accordingly, the Konrad reference or the Rose reference, in combination with the Razdan reference, fail to establish a *prima facie* case of obviousness with respect to applicant's claim 7. Claims 8 and 9 depend from claim 7 and are therefore patentable for the same reasons as claim 7. The Applicants respectfully submit that these rejections are in error and should be withdrawn.

#### CONCLUSION

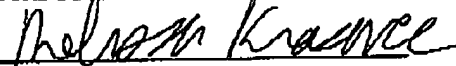
In light of the remarks presented herein, it is requested that the Examiner reconsider and withdraw the present rejections. Early and favorable action in the case is respectfully requested.

Applicant has made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicant respectfully requests reconsideration of this application and allowance of Claims 1-3, 7-9, 25, and 26.

Respectfully submitted,

THE PROCTER & GAMBLE COMPANY

By



Signature

Melissa Krasovec

Typed or Printed Name

Registration No. 59,174

(513) 626-4055

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